Guide to Critical Monitoring of Minos+ Production Keepup

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PURPOSE:

The purpose of this document is to inform its reader how to:

1) Connect to the Minos+ system via kerberos.
2) Learn how to discover and identify the most recent SamwebID for production keepup.
3) Use a Samweb page to extract information about file processing successes and failures.
4) How to report these errors to the correct sources at-hand.

GETTING REGISTERED:

In order to keep up-to-date with the most recent news concerning minos-production, follow the "Hello Team" guide within the OPOS wiki to subscribe yourself to their mailing list. You will also need to have followed the instructions to submit a service-desk ticket granting you authentication to enter the minos production machine: minos51.FNAL.gov

As part of the minos-batch email list, you will receive automated emails daily via minos's Cron Daemon. Make note of the time you receive these emails, for the ones that pertain to Nightly Production Keepup are normally scheduled at about 11:30pm US Central time.

CHECKING YOUR SOURCES:

The most useful place for checking the status of the keepup jobs is via the Samweb URL, supplied to you via the Cron Daemon. An example URL is below, complete with cluster ID:

http://samweb.fnal.gov:8480/station_monitor/minos/stations/minos/projects/elm6.keepup.20160218233002

BLUE: This is the generic Samweb server URL to host the station monitors.
GREEN: This is the directory of which individual Samweb project pages are hosted.
RED: This is the Samweb ID. Its organization is as follows:

20160218233002 – [year][two-digit month][two-digit day][fifebatch number]
**Note: The Fifebatch number is standardized; either ending with 233001, 233002, 233003 or 233004.
This allows you to search for any keepup day you desire. The most recent being the one prior to today.

Therefore, if you cannot find the late-night email from the Cron Daemon, one can always figure out the URL via trial and error of all four fifebatch node paths. If all these sources fail, email minos-batch and ask them if they can confirm cancellation of that day's keepup.

Error Extraction:

Given the Samweb URL and Samweb project ID above, it becomes extremely simple to hone any error processes that may occur. While it is always possible to visit the Samweb URL and see, at a glance, the total of jobs that completed, failed or are pending, it is difficult to see individual file errors without automation. Therefore, OPOS provides an automated error-reporting script for your convenience.

Using the Script:
Using the following terminal commands with the bold components only necessary if on Mac OSX El-Capitan:

>>kinit [your kerberos principal]
>>enter your password: _____
>>ssh **-o GSSAPIKEYEXCHANGE=no** minospro@minos51.FNAL.gov
>>setup_jobsub
>>setup_samweb
>>cd /minos/app/home/minospro/OPOS/report_generation/py_classes
>>python report.py [# of days ago you wish to observe]

**You may need to use a text editor to alter what is commented out in order to make the script function properly for you. It is open to edit within the group and some may use it for different reporting needs.

Documenting your Results:

You must now document the output of your findings on the OPOS Minos+ monitoring checklist. Ask any OPOS team member to share the spreadsheet with you which is hosted on a local Google-Drive. This checklist can be completed using a combination of the Samweb URL described above as well as the script output.

You must also document the error processes and the critical report statistics daily via the Service-Now ticket assigned to Minos+ keepup. In the rare occasion that keepup was cancelled that day, mention this in the day's SNOW ticket entry as well as the Minos+ Monitoring Checklist.

Presenting your Results:

It is beneficial to the OPOS team to present weekly findings related to Minos+ keepup monitoring. Using the two documents above, the Monitoring checklist as well as the SNOW ticket dialogue, keep an up-to-date daily compilation report to present how smoothly everything went during the week to your colleagues. An example weekly report is given below, along with examples of the other two entries for your convenience.

Entry Examples:

1) Example OPOS Minos+ Production Keepup Monitoring Checklist:

Day	Date	Description	Input dataset	Project url	Number of input files	Jobs	Successful jobs
Thursday	2/18/2016	Nightly KeepUp	keepup.20160218233002	http://samweb.fnal.gov:8480/station_monitor/minos/stations/minos/projects/elm6.keepup.20160218233002	120	120	46

Error jobs	Error code 0	1	2	3	4	7	8
0	10	0	0	0	0	0	0

100	101	136	141	Job restarts	Cluster ID
0	51	0	0	0	4583980.0@fifebatch1.fnal.gov

2) Example Service-Now Ticket Dialogue:

Dear team,

Again there are jobs failing with the same error code. Details below:

17/02/2016
Cluster id. 4583980.0@fifebatch1.fnal.gov
Samweb Monitor: http://samweb.fnal.gov:8480/station_monitor/minos/stations/minos/projects/elm6.keepup.20160217233002
61 input files (one job per file)
51 jobs fail with error code 101 | Gaps in beam spill database

16/02/2016
Cluster id. 7448302.0@fifebatch2.fnal.gov
Samweb Monitor: http://samweb.fnal.gov:8480/station_monitor/minos/stations/minos/projects/elm6.keepup.20160216233002
119 input files (one job per file)
10 successful jobs.
109 jobs fail with error code 101 | Gaps in beam spill database

Best Regards,
Felipe Alba

3) Example Weekly Report

Document	OPOS weekly report on MINOS+ Reco KeepUp			
Description	This documents contains a report generated by the OPOS team on the Reconstruction KeepUp processing for MINOS+ experiment. It contains the report on the processing of one week.			
SNOW Request ID	**ID**	RITM0202410	**Status**	Work in progress
Author	Tyler Steven Propp			
Date	Friday 19th 2016			
Production Stage	Reconstruction			
Processing details	**Trigger**	**Minos release**		**ON/OFF**
	FD	elm6		ON
	ND	elm6		ON
Monitored week	**Starting date**	**Ending date**	**Start run**	**End run**
	Friday Feb 12th, 2016	Thursday Feb 18th, 2016	FD: 63974 ND:63942	FD: 64028 ND: 64068
Number of files	687			
Successful files	350 (50.95%)			
Jobs submitted	687			
Jobs failed	337 (49.05%)			
Running site(s)	Fermigrid			
Average processing time	10 min			
Highlights				
Error messages	**Description** ● 301 jobs fail with error code 101 | gaps in beam-spill database ● 35 jobs fail with error code 4 | SAM-PROJECTS problem ● 1 jobs with error code 136 | Floating Point Exception (FPE)			**Fixed Status** YES YES YES
Issues				
Comments				